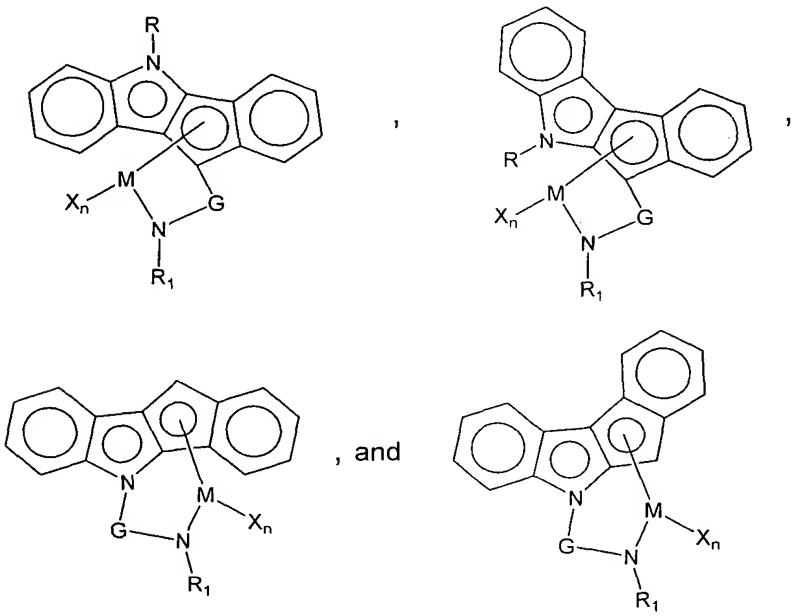
We claim:

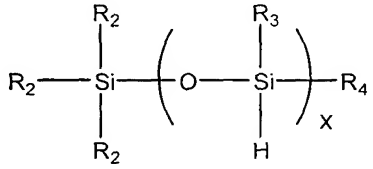
1. A process which comprises polymerizing an olefin in the presence of a hydrosilane and a catalyst system which comprises an activator and a bridged indenoindolyl Group 4-6 transition metal complex having open architecture.
2. The process of claim **1** wherein the transition metal complex has the general structure selected from the group consisting of:



in which M is a Group 4-6 transition metal, G is a linking group, R is alkyl, aryl, dialkylboryl, or trialkylsilyl, R_1 is C_1-C_{20} hydrocarbyl, X is alkyl, aryl, alkoxy, aryloxy, halide, dialkylamino, or siloxy, and n satisfies the valence of M.

3. The process of claim **1** wherein the olefin is selected from the group consisting of ethylene, propylene, 1-butene, 1-pentene, 1-hexene, 1-octene and mixtures thereof.
4. The process of claim **1** wherein the activator is selected from the group consisting of alumoxanes, ionic borates, ionic aluminates, alkylaluminums, and aluminoboronates.
5. The process of claim **2** wherein M is a Group 4 transition metal.

6. The process of claim **2** wherein M is Ti or Zr, G is dimethylsilyl, and X is halide or alkyl.
7. The process of claim **1** wherein the polymerization is performed at a temperature within the range of about 30°C to about 100°C.
8. A slurry polymerization process of claim **1**.
9. A gas-phase polymerization process of claim **1**.
10. The process of claim **1** wherein the hydrosilane has the general structure:



wherein each R_2 is independently selected from the group consisting of hydrogen, C_1–C_{10} hydrocarbyl, and trifluoroalkyl; R_3 is C_1–C_{10} hydrocarbyl; x is an integer from 0 to 200 and R_4 is selected from the group consisting of hydrogen, trialkylsiloxy and C_1–C_{10} hydrocarbyl with the proviso that when x is 0, R_4 is hydrogen.

11. The process of claim **10** wherein R_2 is C_1–C_{10} hydrocarbyl, x is 0 and R_4 is hydrogen.
12. The process of claim **10** wherein x is an integer from 5 to 100, R_2 is C_1–C_{10} hydrocarbyl, and R_4 is trialkylsiloxy.
13. The process of claim **12** wherein R_2 and R_3 are methyl and R_4 is trimethylsiloxy.
14. The process of claim **10** wherein the hydrosilane is used at a level of from about 20 to about 1000 grams of silicon per gram of transition metal.
15. The process of claim **14** wherein the hydrosilane is used at a level of from about 50 to about 500 grams of silicon per gram of transition metal.